

CLAIMS

We claim:

1. An antenna, comprising:
an inverted-L antenna (ILA) fed by an input; and
an ILA electromagnetically coupled with respect to the fed ILA,
facing the fed ILA, and separated from the fed ILA by a gap,
whereby positioning of the gap determines bandwidth of the antenna.
2. The antenna of Claim 1, wherein the coupled ILA is longer than the fed ILA.
3. The antenna of Claim 1, wherein the fed ILA, the coupled ILA, and the gap are positioned with respect to each other to form three sides of a square.
4. The antenna of Claim 1, wherein the fed ILA comprises a vertical leg;
wherein the coupled ILA comprises a vertical leg; and
wherein the vertical leg of the fed ILA is parallel to and of a same length with the vertical leg of the coupled ILA.
5. The antenna of Claim 1, wherein the fed ILA comprises a horizontal leg;
wherein the coupled ILA comprises a horizontal leg; and
wherein the horizontal leg of the fed ILA is shorter than the horizontal leg of the coupled ILA.

6. A dual-band antenna, comprising:
a first inverted-L antenna (ILA);
a second ILA electromagnetically coupled with respect to the first ILA, facing the first ILA, and separated from the first ILA by a gap;
a monopole antenna disposed between the first ILA and the second ILA, and operative to receive input; and
a connection between the monopole antenna and the first ILA to feed input to the first ILA.

7. The dual-band antenna of Claim 6, wherein the second ILA is longer than the first ILA.

8. The dual-band antenna of Claim 6, wherein the first ILA comprises a horizontal leg;
wherein the second ILA comprises a horizontal leg; and
wherein the horizontal leg of the first ILA is shorter than the horizontal leg of the second ILA.

9. The dual-band antenna of Claim 6, wherein the first ILA comprises a vertical leg;
wherein the second ILA comprises a vertical leg; and
wherein the monopole antenna is centered between the vertical leg of the first ILA and the vertical leg of the second ILA.

10. The dual-band antenna of Claim 9, wherein the monopole antenna is shorter in length than the vertical leg of the second ILA.

11. The dual-band antenna of Claim 6, wherein the connection connects to the monopole antenna near its base and connects to the first ILA at its base.

12. A triple-band antenna, comprising:
a first inverted-L antenna (ILA);
a second ILA electromagnetically coupled with respect to the first ILA, facing the first ILA, and separated from the first ILA by a gap;
a monopole antenna disposed between the first ILA and the second ILA, and operative to receive input from a feed probe longitudinally lined up with the monopole antenna;
a connection between the monopole antenna and the first ILA to feed the input to the first ILA; and
a conductor connected to the monopole antenna opposite to the connection, and the conductor extends horizontally from the monopole antenna towards, but not reaching, the second ILA,
whereby the conductor and the feed probe form a third ILA.

13. The triple-band antenna of Claim 12, wherein the second ILA is longer than the first ILA.

14. The triple-band antenna of Claim 12, wherein the first ILA comprises a horizontal leg;
wherein the second ILA comprises a horizontal leg; and
wherein the horizontal leg of the first ILA is shorter than the horizontal leg of the second ILA.

15. The triple-band antenna of Claim 12, wherein the first ILA comprises a vertical leg;
wherein the second ILA comprises a vertical leg; and

wherein the monopole antenna is centered between the vertical leg of the first ILA and the vertical leg of the second ILA.

16. The triple-band antenna of Claim 15, wherein the monopole antenna is shorter in length than the vertical leg of the second ILA.

17. The triple-band antenna of Claim 12, wherein the connection connects to the monopole antenna near its base and connects to the first ILA at its base.

18. A dual-band antenna, comprising:
- an inner cut loop antenna with a first inverted-L antenna (ILA) facing a second ILA across a first gap, and with the first ILA being fed input while the second ILA is electromagnetically coupled at least to the first ILA;
- an outer cut loop antenna encompassing the inner cut loop antenna;
- and
- the outer cut loop antenna including a third ILA facing a fourth ILA across a second gap, with the third ILA being fed input via a feed probe and a connection connected to the first ILA of the inner cut loop antenna while the fourth ILA is electromagnetically coupled at least to the third ILA.
19. The dual-band antenna of Claim 18, wherein the third ILA of the outer cut loop comprises a horizontal leg having a length L ; and
- wherein the connection has the length L .
20. The dual-band antenna of Claim 18, wherein the second ILA is longer than the first ILA.
21. The dual-band antenna of Claim 18, wherein the fourth ILA is longer than the third ILA.
22. The dual-band antenna of Claim 18, wherein the first ILA comprises a horizontal leg;
- wherein the second ILA comprises a horizontal leg; and
- wherein the horizontal leg of the first ILA is shorter than the horizontal leg of the second ILA.

23. The dual-band antenna of Claim 18, wherein the third ILA comprises a horizontal leg;

wherein the fourth ILA comprises a horizontal leg; and

wherein the horizontal leg of the third ILA is shorter than the horizontal leg of the fourth ILA.

24. The dual-band antenna of Claim 18, wherein the connection connects to the first ILA near its base and connects to the third ILA at its base.